

REMARKS

The claims are 7 and 8.

The above amendment is responsive to points set forth in the Official Action.

In this regard, a new set of claims is presented, which claims are in product-by-process form. Claim 5 has been replaced by new claim 7 and claim 6 has been replaced by new claim 8.

The significance of this amendment will become further apparent from the remarks below.

Claim 6 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ishikawa et al. (U.S. 6,132,856) for reasons of record.

This rejection is respectfully traversed.

The rejection states that Ishikawa et al. do not teach the machining of the component but rather the forming of the component which is hot pressed into the desired shape at page 2, lines 5 to 3 from the bottom of the Official Action.

In reply, Ishikawa et al. describe at the above portion that the infusible fiber was processed into a unidirectionally aligned sheet-like material, and the sheet-like material was set in a mold made of carbon.

In contrast, the present invention provides a component of an inorganic fiber-bonded ceramics, wherein the component is obtained by disposing a laminate material of inorganic fibers around a carbon core having a predetermined shape, to prepare a preliminary shaped material, or disposing a laminate material of inorganic fibers on a surface of a component which is obtained by processing a bulk material of the inorganic fiber-bonded ceramics to a size smaller than a predetermined component size, to produce a preliminary shaped material, setting the preliminary shaped material in a carbon die, covering the preliminary shaped material with a carbon powder, and then, loading a pseudo-isotropic pressure on the preliminary shaped material by hot-pressing in an inert gas, and wherein the component has a curved surface and/or an inclined surface and the fibers are aligned in a surface shape of the curved surface and/or the inclined surface.

In this respect, no preliminary shaped material is prepared in the formation of the molded material, disclosed by Ishikawa et al., obtained by the operations of merely processing into a

unidirectionally aligned sheet-like material and setting the sheet-like material in a mold made of carbon.

According to the present invention, the inorganic fiber-bonded ceramics can be primary-molded in a shape similar to a component shape, and there is provided an inorganic fiber-bonded ceramic component wherein fibers are regularly aligned on the surface thereof and properties of the surface are homogenous and the component is almost free from the occurrence of peelings of surface fibers or delamination.

With regard to the molded material of Ishikawa et al., the molded material can have the above functions and effects merely by chance, depending upon component shape, in some cases.

Accordingly, it is apparent that new claim 8 is neither disclosed nor suggested by Ishikawa et al.

Claim 5 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese document 09-052776 (JP '776), for reasons of record.

This rejection is also respectfully traversed.

JP '776 discloses a process for the production of a fiber-bonded ceramic, which process comprises hot-pressing a laminate material of inorganic fibers in an inert gas under a pressure of from 50 to 1,000 kg/cm² at a temperature of from 1,550 to 1,850°C. JP '776 discloses in Example 1 that 150 sheets of sheet-like material, obtained by aligning inorganic fibers unidirectionally, were laminated, the resultant laminate material was cut into a size of 90 x 90mm, the cut material was set in a carbon die for hot-pressing, and it was temperature-increased to 1,750°C under a pressure of 500 kg/cm² in an argon current and maintained at the same temperature for 1 hour, to obtain a fiber-bonded ceramic.

Example 1 discloses the dispersion state of TiC, the generation state of boundary carbon layer, and the measurement results of various strengths with regard to the above-obtained fiber-bonded ceramic.

On the other hand, the present invention provides a component of an inorganic fiber-bonded ceramics, wherein the component is obtained by disposing a laminate material of inorganic fibers around a carbon core having a predetermined shape, to prepare a preliminary shaped material, or disposing a laminate material of inorganic fibers on a surface of a component

which is obtained by processing a bulk material of the inorganic fiber-bonded ceramics to a size smaller than a predetermined component size, to produce a preliminary shaped material, setting the preliminary shaped material in a carbon die, covering the preliminary shaped material with a carbon powder, and then, loading a pseudo-isotropic pressure on the preliminary shaped material by hot-pressing in an inert gas, and wherein the component has a curved surface and/or an inclined surface and the fibers are aligned in a surface shape of the curved surface and/or the inclined surface.

JP '776 only prepares the laminate material but does not prepare the preliminary shaped material. In this respect, the present invention is fundamentally different from the invention of JP '776 which merely discloses hot-pressing the laminate material of the unidirectionally aligned sheet-like material.

According to the present invention, the inorganic fiber-bonded ceramics can be primary-molded in a shape similar to a component shape, and there is provided an inorganic fiber-bonded ceramic component wherein fibers are regularly aligned on the surface thereof and properties of the surface are homogenous and the component is almost free from the occurrence of peelings of surface fibers or delamination.


For the foregoing reasons, it is apparent that the rejections on prior art are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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